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# ***INTERAGENCY FLOOD RISK ASSESSMENT TEAM***

***... a Consortium of organizations established to integrate communications and deliver information to the general public and interested organizations on chemical risks related to flooding in the aftermath of the Cerro Grande Fire***

**Participating Organizations:**

***New Mexico Environment Department***

***New Mexico Department of Health***

***U.S. Department of Energy***

***U.S. Environmental Protection Agency***

***Los Alamos National Laboratory***

***U.S. Forest Service***

***U.S. Army Corps of Engineers***

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## **RISKS MINIMAL FROM CERRO GRANDE FLOOD-CARRIED CHEMICALS**

(Santa Fe, NM) – An interagency team of scientists has completed its assessment of the threat of potentially contaminated sediment and ash movement from flooding in and around the almost 50,000 acres scorched by the Cerro Grande Fire near Los Alamos last year. The Interagency Flood Risk Assessment Team (IFRAT) study shows that common activities, such as swimming or those that result in direct skin contact with ash-containing sediments or water, pose no substantial increased health risk over that posed by the same activities in non-ash-containing sediment or water. The study also found no immediate (that is, during the summer and fall of 2000) post-fire risks from eating fish or animals living in ash-containing sediments or water. The IFRAT will be hosting a public meeting on July 25, 2001, from 6 to 9 p.m., at Northern New

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Mexico Community College, Salazar Center Theater, to discuss its findings, describe their basis, and answer questions about their study.

Post-fire sampling primarily showed higher levels of copper, manganese, iron, and zinc in ash-containing sediments in canyons compared to non-ash-containing sediments sampled before the fire. While the metals are essential nutrients and are readily taken up by plants, they can be toxic at high doses. The concentration of metals in post-fire ash is most likely a natural result of combustion of plants that have naturally taken up these metals. The IFRAT study has shown that ingestion of plants grown directly in ash-containing flood sediments over a long period of time (30 years) may be associated with potential increases in chronic health problems, compared to plants grown in non-ash-containing sediments. This potential risk and concern related to it can be reduced primarily by not using Cerro Grande ash as a soil amendment in gardens in which food is grown. These ash-containing sediments have obvious dark bands or streaks of ash in them. No potential increases in chronic health problems were seen in a computer model of crops irrigated over a growing season with Rio Grande water containing flood runoff.

Although some samples collected after the fire showed increased concentrations of some radionuclides and nonradioactive carcinogens, the study found no marked difference in potential chronic health effects from these substances in sediments, or from direct exposure to flood waters (such as swimming) or sediments containing these substances.

The IFRAT, formed while the Cerro Grande Fire was still burning, is comprised of managers and scientists from the New Mexico Environment Department, the New Mexico Department of Health, the U.S. Department of Energy, the U.S. Environmental Protection Agency, Los Alamos National Laboratory, the U.S. Forest Service, and the U.S. Army Corps of Engineers. The team has been studying how chemicals, including radionuclides, transported by increased flooding due to the fire might affect downstream property owners, water users, and the general public.

The IFRAT's study included development of a risk assessment that compared ash, ash-containing sediment, and water samples collected in and around the Pajarito Plateau and Los Alamos National Laboratory (LANL) before and after the fire (such as during runoff events last summer), and in and around the Viveash Fire that burned last summer northeast of Pecos, New Mexico. Although the risk assessment assumed the concentrations of chemicals, including

radionuclides, in soil and water will remain constant for 30 years, concentrations of these compounds are actually expected to decrease over time as stormwater and snowmelt flow through canyons, causing mixing and dilution with other sediments. Flooding patterns may also vary over the next few years; therefore the team and its sponsoring agencies will continue to conduct sampling and reassess the risks over this period.

The risk assessment also assumed the highest concentrations detected were widespread, a condition actually found only in isolated spots. To determine the potential risk to an individual, the IFRAT assumed individual exposure for 30 years. These assumptions result in a very conservative estimation of risk designed to highlight any potential problems.

The IFRAT did not address exposure through local tribal cultural uses. Affected tribes have indicated that they will be conducting their own independent risk assessments. The IFRAT also did not address acute health effects from the effects of the smoke plume that emanated from the Cerro Grande Fire. The New Mexico Environment Department has commissioned an independent risk assessment to study this. That study also seeks to independently study the surface water health effects examined by the IFRAT. Those results are expected in late Spring, 2002.

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